

## CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please cancel claims 5-10, 14, 15, and 23-25 without prejudice.

1. (Original) A communication system, comprising:
  - a central station that receives an optical data signal and applies a composite code to the optical signal, the composite code including a first code and a second code, so as to produce a composite-coded optical signal;
  - a first-level mux station that receives the composite-coded optical signal and decodes the first code from at least a portion of the optical signal, producing a first-level decoded optical signal;
  - a second-level mux station that receives the first-level decoded optical signal and decodes the second code from at least a portion of the optical signal, thereby producing a fully decoded optical signal; and
  - a user station that receives the fully decoded optical signal.
2. (Original) The communication system of claim 1, wherein the first-level mux station includes a reconfigurable encoder for applying a selected composite code.
3. (Original) The communication system of claim 1, wherein the central station applies a composite code selected from a set of composite codes.
4. (Original) The communication system of claim 3, wherein composite codes are generated from a set of first-level codes and a set of second-level codes.

Claims 5-15 (Canceled).

16. (Previously Presented) A method, comprising:

selecting a first temporal code and a second temporal code for an optical signal to identify a first station and a second station of a plurality of second stations, respectively;

applying the first and second temporal codes to the optical signal with at least one fiber Bragg grating;

broadcasting the optical signal to a user station via the first station and the second station;

stripping the first temporal code from the optical signal at the first station; and

stripping the second temporal code from the optical signal at the second station after the first station strips off the first temporal code.

17. (Previously Presented) The method of claim 16, wherein the temporal code is a composite code.

Claim 18 (Canceled).

19. (Previously Presented) A passive optical network, comprising:

at least one first-level multiplexing station that receives a first optical signal, applies a first-level code to the first optical signal, and transmits a coded first optical signal; and that receives a second optical signal, decodes a first-level code from the second optical signal, and transmits a resulting decoded optical signal; and

a second-level multiplexing station that receives an optical signal from the at least one first-level multiplexing station and decodes the optical signal to decode a second-level code.

20. (Previously Presented) The passive optical network of claim 19, wherein the second-level multiplexing station applies a second-level code to an optical signal that is transmitted to the at least one first-level multiplexing station.

21. (Original) A communication system, comprising:

- a user station that transmits an optical signal;
- a second-level mux station that receives the optical signal and applies a second-level code to the optical signal, thereby producing an encoded optical signal;
- a first-level mux station that receives the encoded optical signal from the second-level mux station and applies a first-level code to the encoded optical signal producing a composite-coded optical signal; and
- a central station that receives the composite-coded optical signal and decodes the first-level code and the second-level code to identify the user station that transmitted the optical signal.

22. (Previously Presented) The central station of claim 6, wherein the code to be applied by the encoder is a composite code.

Claims 23-28 (Canceled).